

REMARKS

Favorable reconsideration of this Application in light of the following discussion is respectfully requested.

Claims 1-35 are pending in the present Application. No new matter has been added.

By way of summary, the Official Action presents the following issue: Claims 1-35 are rejected under 35 U.S.C. § 103 as being unpatentable over Bar et al. (U.S. Patent Application Publication No. 2004/0235495, hereinafter “Bar”) in view of Tsunebara et al. (U.S. Patent Application Publication No. 2004/0214521, hereinafter “Tsunebara”).

REJECTION UNDER 35 U.S.C. § 103

The outstanding Official Action has rejected Claims 1-35 under 35 U.S.C. § 103 as being unpatentable over Bar in view of Tsunebara. The Official Action contends that Bar describes all of the Applicants’ claimed features with the exception of a receiving radio set receiving packets and then sending the packets back after a certain length of time corresponding to an integral multiple of a prescribed unit time, and the sending radio set calculating the time required for packets to be transmitted to, and, return from the receiving radio set by subtracting the integral multiple of a prescribed unit time from the time taken from the transmission of packets to reception of packets. However, the Official Action cites Tsunebara as describing this more detailed aspect of the Applicants’ claimed advancement, and states that it would have been obvious to one of ordinary skill in the art at the time the advancement was made to combine the cited references for arriving at the Applicants’ claims. Applicants respectfully traverse the rejection.

Applicants’ Claim 1 recites, *inter alia*, a ranging and positioning system, including:

. . . a sending radio set configured to transmit packets;

a receiving radio set configured to receive the packets and then send the packets back to the sending radio set after a certain length of time corresponding to an integral multiple of a prescribed unit time,

wherein the sending radio set calculates the time required for the packets to be transmitted to, and, return and from the receiving radio set by subtracting the integral multiple of a prescribed unit time from the time taken from transmission of packets to reception of packets, thereby determining the distance between the sending and receiving radio sets according to the time required for the packets to be transmitted and return. (emphasis added)

Bar describes a system and associated method for determining the position of a user appliance in a radio communication system. The system is configured of a plurality of radio cells (CE1), each of which is supported by a corresponding base station (NB1).¹ Within cell (CE1), a mobile radio device (UE1) may establish a radio link with a base station in the usual manner. In order to be able to determine the position, or location, of the mobile radio device (UE1), present in the radio cell (CE1) at a given time, position elements (PE11-PE14) are arranged and distributed in the radio cell (CE1).² The positional elements are placed in external boundaries of the radio cell (CE1).

In operation, the Bar system determines the position of mobile radio devices (UE1) by transmitting one or more locating measuring signals from the base station (NB1). The transmitted measuring signals determine a distance circle (RTK1) around the base station (NB1). In order to further delimit the location of the mobile radio device (UE1), one or more locating measuring signals are transmitted simultaneously, or each offset chronologically by a known time period, by at least two further position elements, such as, for example, (PE1) and

¹ Bar at Fig. 2, paragraph 19.

² Bar at paragraph 19.

(PE3). In this way, at least two further distance circles (CI1) and (CI3) are determined using corresponding transit time measurements of these locating measuring signals.³

As noted in the Official Action Bar fails to disclose or suggest calculating the time required for packets to be transmitted to, and return from a receiving radio set by subtracting the integral multiple of a prescribed unit time from the time taken from transmission of packets to reception of packets in order to determine the distance between sending and receiving a radio set. However, the Official Action has cited Tsunebara as describing this more detailed aspect of the Applicants' claimed advancement.⁴

Tsunebara describes an access point for use with a wireless LAN. As shown in Figure 1, a signal receiving unit (101) performs a reception processing corresponding to a radio signal received via the antenna (100). A signal memory control module (120) starts to capture the received signal generated by the signal receiving unit (101) in a signal memory (102) in response to a capture start command issued by a signal processing module (103). The memory control module (120) stops the capture of the received signal in the received signal memory (102) upon reception of a packet detection signal issued by a packet detecting module (121).⁵ As noted at paragraph [0053], the packet capture procedure may be stopped after a lapse of a predetermined time.

Conversely, in an exemplary embodiment of the Applicants' invention, a ranging and positioning system is provided in which a distance between two radio sets is measured. A sending radio set is configured to transmit packets and a receiving radio set is configured to receive the packets and **send the packets back to the sending radio set after a certain length of time**. The length of time corresponds to an integral multiple of a prescribed unit time. In

³ Bar at paragraph 20.

⁴ See Official Action, paragraph bridging pages 2 and 3.

⁵ See Tsunebara at Figure 1; paragraphs [0041] and [0042].

this manner, **the sending radio set calculates a time** required for packets to be transmitted and returned back from the receiving radio set by subtracting the integral multiple of the prescribed unit time from the time taken from transmitting to reception of the packets. The distance between the sending and receiving radio sets is determined according to the time required for packets to be transmitted and returned from their point of origination.⁶

As Tsunechara describes a method by which a terminal location is determined based upon the amount of time necessary to capture a signal transmitted from the terminal. Tsunechara does not disclose or suggest receiving packets and then returning the packets back to the sending radio set after a certain length of time in which the length of time corresponds to an integral multiple of a prescribed time. Nor does Tsunechara describe that the sending radio set calculates a time required for packets to be transmitted and returned back from the receiving radio set by subtracting the integral multiple of the prescribed unit time from the time taken from transmitting to reception of the packets. Simply stated, Tsunechara calculates a location of a terminal based upon timing of a received signal.

Accordingly, Applicants respectfully request that the rejection of Claims 1-35 under 35 U.S.C. § 103 be withdrawn.

⁶ Application at Figs. 4-5.

CONCLUSION

Consequently, in view of the foregoing remarks, it is respectfully submitted that the present Application, including Claims 1-35, is patently distinguished over the prior art, in condition for allowance, and such action is respectfully requested at an early date.


Respectfully submitted,

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